HUGHES INFORMATION TECHNOLOGY SYSTEMS

ADDENDUM NOTICE

EOS Core System (ECS) Project Contract No. NAS5-60000

July 1, 1998

Document No.: 814-RD-100-001

Title: Release 2.0 Toolkit 5.2.3 Version Description Document (VDD)

Enclosed please find addendum pages for the subject document. Please add the following pages:

Insert

6-1 through 6-4

7-1 through 7-6

If you have any questions, please contact our Data Management Office at (301) 925-0509.

6. Addendum A: Patch to Toolkit 5.2.3

6.1 Summary of Installed Changes

CCR 98-0755 documents the problem fixed with this Toolkit patch release. The details of the NCR (ECSed 15880) corrected with this patch are provided in section 6.2.

6.1.1 Background information

There are two scripts which were changed, INSTALL-HDF and INSTALL-HDFEOS-Wrap, to include the correct version of HDF and HDFEOS in the distribution list of tar files.

This patch updates the version of the install file, so that the HDF4.1r1.1 can be installed by the science computing facilities (SCFs).

6.1.2 Files changed

The following files were modified:

/ecs/formal/bin/sun5/INSTALL-HDF

/ecs/formal/bin/sun5/INSTALL-HDFEOS-Wrap

To verify that the files received are the correct version, check the file prolog section (BEGIN_FILE_PROLOG) for an entry dated June 24, 1998. The entry identifies the NCR and a description of the fix for this patch. Copies of the file prologs have been provided for quick reference.

INSTALL-HDF

```
#------------------------------------------------------------------------
# filename:
#       INSTALL-HDF
#
# description:
#       HDF installation script for the SDP (PGS) Toolkit
#
# usage:
#       INSTALL-HDF [-f90 [-NAG]] [-fc_path <path>] [-cc_path <path>]
#                   [-sgi32 | -sgi64] [-log <log-file> [-append]]
#                   [-clean | -cleano] [-strip] [-w_home <file>]
#                   [-df <distribution-file>] [-batch]
#                   [-install_dir <base installation directory>]
#       INSTALL-HDF [-h]
#
#         -f90     : build HDF FORTRAN modules using f90
#                    optional flag -NAG specifies NAG f90
#         -fc_path : set the path of the FORTRAN compiler to <path>
#         -cc_path : set the path of the C compiler to <path>
#         -sgi32   : build in -n32   mode (SGI Power Challenge only)
#         -sgi64   : build in 64-bit mode (SGI Power Challenge only)
#         -dbug    : build in debug mode
```

```
#          -log     : sdone session output to new <log-file>
#          -append  : append to existing <log-file>
#          -clean   : run 'make clean' after doing the installation
#          -cleano  : clean up all object and a.out files
#          -strip   : strip out all non-installation files following install
#          -w_home  : write HDF home directory to <file>
#          -df      : install HDF from distribution file <distribution-file>
#          -batch   : run script in batch (i.e. non-interactive) mode
#          -h       : display this help message and exit
#
# notes:
#       1)  The use of the -clean option will cause the HDF utilites to
#           be deleted.  To preserve them, use the -cleano option instead.
#
#       2)  The -f90 and -NAG options are  * * NOT IMPLEMENTED  * *
#           Currently, these options are accepted, but ignored.
#
#
# author:
#       Mike Sucher / Applied Research Corp.
#
# history:
#       11-May-1995 MES Initial version
#       10-Jul-1995 MES Added patch to remove the typedef of _fcd from
#                       hdfi.h if building HDF on a Cray.
#       17-Jul-1995 MES Configure for IRIX64, the sgi 64 bit O/S.
#                       - recognize OSTYPE of IRIX64
#                       - Force all objects to be built in 32-bit mode.
#                       - Do not not attempt to build basic utilities,
#                         because they need a missing 32-bit library.
#       17-Jul-1995 MES Added a patch to fix file hdf.inc, the broken
#                       FORTRAN header file in the HDF3.3r4 release.
#       02-Aug-1995 MES Patches to make netcdf section build on the cray.
#       19-Sep-1995 MES Don't remove tar file unless it was just generated
#                       by uncompressing the distribution file.
#                       Recognize the -sgi64 option.
#       31-Oct-1995 MES Recognize the -sgi32 option.
#                       Various tweaks to sgi hanlding.
#       01-Nov-1995 MES More tweaks to sgi hanlding.
#                       Add option handling for -f90, but don't implement yet.
#       02-Nov-1995 MES Add -fc_path and -cc_path options, but don't implement.
#       06-Nov-1995 MES Fix bug in NCSA-supplied FORTRAN header file: dffunc.inc
#       21-Nov-1995 MES Set default installation directory to:
#                           `pwd`/hdf/$BRAND
#                       to facilitate multi-platform installations.
#       23-Apr-1996 MES Converted from csh to sh and rewrote to use
#                       sh features, such as functions.
#                       Removed version-specific code - it will now
#                       go in modules that will allow multiple versions
#                       of HDF to be supported, and facilitate maintenance
#                       of this file.  Currently this script can call
#                       modules to install either 3.3r4 or 4.0r1p1,
#                       however only 4.0r1p1 installation will be supported
#                       by the Release A version of the SDP Toolkit.
#       26-Apr-1996 MES Updated SetArchitecture() to set CC CFLAGS and F77
#                       for all platforms
#       22-Aug-1996 MES Updated to add support for support HDF4.0r2
#                       - added function UserCompilers to implement the
```

```
#                           -cc_path and -fc_path options.
#                         - updated GetDistribution to recognize HDF4.0r2.tar.gz
#                           and HDF4.0r2.tar.Z distribution files.
#                         - updated UnpackDistribution to support .gz files,
#                           assuming the GNU version of zcat is available.
#                         - added function GnuZcat to attempt to determine
#                           if GNU zcat is available.
#                         - added the -df option so the user may pass in the
#                           name of the distribution file (currently defaults
#                           to HDF4.0r2.tar.Z).
#                         - added code to pass the -set_compilers option to
#                           INSTALL-HDF4.0r2 when default compilers must be
#                           overridden.
#       04-Sep-1996 MES Add the -strip option
#       15-Apr-1997 DaW Modified flags for Power Challenge.  Added support
#                       for old 32-bit mode on Power Challenge
#                       But it is not documented because SGI is going to remove
#                       soon.
#      24-Jun-1998 MEDS Updating script to include new tar file for version
#                   HDF4.1r1.1 in the distribution list (for NCR 15880)
#
#------------------------------------------------------------------------
```

INSTALL-HDFEOS-Wrap

```
#------------------------------------------------------------------------
# filename:
#       INSTALL-HDFEOS-Wrap
#
# description:
#       HDFEOS installation script wrapper for the SDP (PGS) Toolkit
#       This purpose of this script is to integrate the installation
#       of HDFEOS when it is being performed concurrently with the
#       SDP Toolkit installation.   In normal use this script is called
#       by INSTALL, the master Toolkit installation script, though it
#       may also be run standalone.
#
# usage:
#       INSTALL-HDFEOS-Wrap [-sgi32 | -sgi64] [-log <log-file> [-append]]
#                           [-df <distribution-file>] [-w_home <file>] [-batch]
#                           [-install_dir <base installation directory>]
#       INSTALL-HDFEOS-Wrap [-h]
#
#         -sgi32  : build in -n32   mode (SGI Power Challenge only)
#         -sgi64  : build in 64-bit mode (SGI Power Challenge only)
#         -log    : send session output to <log-file>
#         -dbug   : build debug version of hdfeos library
#         -append : append to existing <log-file>
#         -w_home : write HDFEOS home directory to <file>
#         -df     : install HDFEOS from distribution file <distribution-file>
#         -batch  : run script in batch (i.e. non-interactive) mode
#         -h      : display this help message and exit
#
# notes:
#       1) An initial installation requires the HDFEOS distribution file to
#          have been previously downloaded.  Also, HDF must already be
#          installed, preferably as part of the Toolkit installation.
#
```

```
#         2) This script requires the environment variables HDFINC and HDFLIB
#            to be properly set.  In normal use these will be set by the
#            INSTALL script.
#
# author:
#        Mike Sucher / Applied Research Corp.
#
# history:
#       27-Sep-1996 MES Initial version (portions taken from INSTALL-HDF)
#        17-Oct-1996 MES Various fixes and enhancements.
#        23-Oct-1996 MES Add UserPrompt -x option to do shell syntax expansion.
#       24-Jun-1998 MEDS Updating script to include new tar file for version
#                   HDF-EOS 2.3 in the distribution list (for NCR 15880)
##
#-------------------------------------------------------------------------
```

6.2 Closed NCRs

This section provides a summary of the NCRs which have been fixed and released as a patch. The following Toolkit NCR has been fixed and is available to the Science Community. This fix occurs in Version 2 Drop 4P Landsat.

The following NCR is closed with this patch:

NCR ID:	**ECSed15880**
Title:	Installation of Toolkit 5.2.3/HDFEOS2.3 not working
Severity:	2
Problem:	The installation script of Toolkit 5.2.3 gives error when HDF install starts saying that tar file for HDF not found.
Resolution:	1) Added the following lines to INSTALL-HDF in distribution list HDF4.1r1.1.tar.Z) tar_file=HDF4.1r1.1.tar hdf_home=HDF4.1r1 ;; 2) Modified the following line in INSTALL-HDFEOS-Wrap : ${distrib_file:=HDF-EOS2.2v1.00.tar.Z} to : ${distrib_file:=HDF-EOS2.3v1.00.tar.Z} 3) and added the following lines to distribution list in INSTALL-HDFEOS-Wrap HDF-EOS2.3v1.00.tar.Z) tar_file=HDF-EOS2.3v1.00.tar HDFEOS_home=hdfeos ;;

6.3 Open NCRs

None.

7. Addendum B: Patch to Toolkit 5.2.3

7.1 Summary of Installed Changes

CCR Number 98-0756 documents the problem fixed with this patch release. The details of the NCR (ECSed 15508) corrected with this patch are provided in section 7.2

7.1.1 Background information

The problem, data was being read and processed repetitively although it was already resident in memory and did not need to be read again. This caused later reads to take too long.

In the original design structure of function, PGS_MET_GetPCAttr(), the memory for an AGGREGATE for later searching for a desired object to be read, would be copied into an aggregate for subsequent searching each time when an object was requested to be retrieved. This logic has never caused any problem in the past until Japan ASTER Team was trying to retrieve 10800 objects that were already written into the HDF product file associated with the particular HDF attribute name of "badpixelinformation". It took about 100 minutes to finish the whole job in retrieving 10800 objects even though the retrieving was from memory for 10799 objects after the first one that was retrieved from the input HDF file.

7.1.2 Files changed

The following files were modified:

/ecs/formal/TOOLKIT/src/MET/tools/PGS_MET_GetPCAttr.c

/ecs/formal/TOOLKIT/src/MET/tools/PGS_MET_GetPCAttrF.c

To verify that the files received are the correct version, check the file prolog section (BEGIN_FILE_PROLOG) for an entry dated June 12,1998. The entry identifies the NCR and a description of the fix for this patch. Copies of the file prologs have been provided for quick reference.

PGS_MET_SearchAttr.c

```
/*****************************************************************************
BEGIN_FILE_PROLOG:

FILENAME:
        PGS_MET_GetPCAttr

DESCRIPTION:
       Retrieves parameter values from the PCF table which are either located as
      HDF attributes in defined product files or in separate ASCII files. ASCII files
      must be in flat ODL format.

AUTHOR:
```

```
        Alward N. Siyyid/ EOSL
        Carol S. W. Tsai / Applied Reseach Corporation

HISTORY:
       18-MAY-95      ANS      Initial version
      01-JUN-95       ANS      Code inspection updates
      13-July-95      ANS      Improved Fortran example
      24-July-95      ANS      Added error handling in case parameters are not
                               defined in hdf or ascii file
      25-July-95      ANS      Fixed ECSed01030
       09-Aug-95      ANS      Added function name to the C synopsis
      11-MAR-96       ANS      Updated for tk5+
       08-Apr-97      CSWT     Added code so that landsat7 files and the different
                               groups in an ascii file can be read.
                               Changed code to return a different status code for
                               "Bad ODL" and "Praameter Not Set"
       14-Apr-97      CSWT     Added  code for reading Node value that is the type
                               of datetime in Landsat7 metadata

       30-May-97      CSWT     Changed code to enable the user to retrieve the
                               container attribute value from an ASCII Metadata
                               file
       15-Jun-97      CSWT     Added code enable the datetime data that is not in the type of
                               string but in the type of UTC DATETIME format without double
                               quotes surrounding it can be retreived from the HDF metadat
                               file or non-HDF metadata file.
       07-Aug-97      CSWT     Dued to the Archive metadata was not written to the ASCII
                               metadata file .met that was generated when the user write the
                               metadata attaching to the HDF fileAdded code to enable the
                               user to retrieve the Inventory metadata from the ASCII metadata
                               file, .met, whereas retrieve the Archive metadata from the HDF
                               file even the given input file is an ASCII metadata file .met(
                               This changing is for NCR ECSed07758 about PGEs need to get
                               metadata from HDF files in B.0)
       01-Oct-97      CSWT     Modified the code that set hdfattrnameflag to be PGS_TRUE if
                               the HDF attribuet name is equal to productmetadata.X or
                               archivemetadata.X (X=0...n) to set hdfattrnameflag to be
                               PGS_TRUE if the HDF attribuet name is equal to coremetadata.X
                               (x=0...n) (This changing is for NCR ECSed09301 about change
                               the Flag set up for archive HDF attribute to inventory)
       02-Oct-97      CSWT     Fixed Bug ECSed09222 about a defect in retrieving the Attribute
                               of Date and Time values
       18-Oct-97      CSWT     Changed the variable zone_hours, Zone hours from GMT (-12 - +12),
                               that defined as a data type of long to be the data type of short
                               in order to prevent a core dump problem on sgi old 32 bit and
                               sgi new 32 bit from executing the MET TestDriver program to
                               retrieve the attribute value with the data type of DateTime
       22-Dec-97      CSWT     Added C library function free() to release previously allocated
                               memory for variable date_time_Ptr, a ODLDate struct pointer
                               declared to hold date and time values (This change is for NCR
                               ECSed10255 about a user (ASTER) is getting a core dump in
                               _get_pcattrib)
       02-Feb-98      CSWT     Deteted two printf, the C User Command, statements called for debugging
                               Added C Standard I/O function "fclose" to close the file associated
                               with fp which is a file pointer previously obtaioned using C Standard
                               I/O function "fopen" (This change is for NCRed11788 about Toolkit
                               5.2.1 PGS_MET_GetPCAttr.c fopen without matching fclose)
       12-Jun-98      CSWT     Modified code that call the function CopyAggregate() to copy a
```

source aggregate node with all of its parameters and all of the node's
progeny into a destination temporal node to only assign the address of
start of a source aggregate node into a destination temporal node
and also deleted code that call the function RemoveAggregate() to remove an
aggregate node and all its progeny as long as the function CopyAggregate()
being called (This change is for NCR ECSed15508 about it spends too much
time to retrieve the data for badpixelinformation)

END_FILE_PROLOG
**********/

PGS_MET_SearchAttrf.c

```
/*******************************************************************************
BEGIN_FILE_PROLOG:

FILENAME:
        PGS_MET_GetPCAttrF

DESCRIPTION:
       Retrieves parameter values from the PCF table which are either located as
      HDF attributes in defined product files or in separate ASCII files. ASCII files
      must be in flat ODL format.

AUTHOR:
       Alward N. Siyyid/ EOSL
       Carol S. W. Tsai / Applied Reseach Corporation

HISTORY:
        18-MAY-95      ANS      Initial version
      01-JUN-95       ANS      Code inspection updates
      13-July-95      ANS      Improved Fortran example
      24-July-95      ANS      Added error handling in case parameters are not
                               defined in hdf or ascii file
      25-July-95      ANS      Fixed ECSed01030
       09-Aug-95      ANS      Added function name to the C synopsis
      11-MAR-96       ANS      Updated for tk5+
       09-Apr-97      CSWT     Added code so that landsat7 files and the different
                               groups in an ascii file can be read.
                               Changed code to return a different status code for
                               "Bad ODL" and "Praameter Not Set"
       14-Apr-97      CSWT     Added  code for reading Node value that is the type

                               of datetime in Landsat7 metadata
       30-May-97      CSWT     Changed code to enable the user to retrieve the
                               container attribute value from an ASCII Metadata
                               file
       15-Jun-1996    CSWT     Added code enable the datetime data that is not in the type of
                               string but in the type of UTC DATETIME format without double
                               quotes surrounding it can be retreived from the HDF metadat
                               file or non-HDF metadata file.
       07-Aug-97      CSWT     Dued to the Archive metadata was not written to the ASCII
                               metadata file .met that was generated when the user write the
                               metadata attaching to the HDF fileAdded code to enable the
                               user to retrieve the Inventory metadata from the ASCII metadata
                               file, .met, whereas retrieve the Archive metadata from the HDF
                               file even the given input file is an ASCII metadata file .met(
                               This changing is for NCR ECSed07758 about PGEs need to get
```

```
                metadata from HDF files in B.0)
01-Oct-97     CSWT    Modified the code that set hdfattrnameflag to be PGS_TRUE if
                      the HDF attribuet name is equal to productmetadata.X or
                      archivemetadata.X (X=0...n) to set hdfattrnameflag to be
                      PGS_TRUE if the HDF attribuet name is equal to coremetadata.X
                      (x=0...n) (This changing is for NCR ECSed09301 about change
                      the Flag set up for archive HDF attribute to inventory)
02-Oct-97     CSWT    Fixed Bug ECSed09222 about a defect in retrieving the Attribute
                      of Date and Time values
18-Oct-97     CSWT    Changed the variable zone_hours, Zone hours from GMT (-12 - +12),
                      that defined as a data type of long to be the data type of short
                      in order to prevent a core dump problem on sgi old 32 bit and
                      sgi new 32 bit from executing the MET TestDriver program to
                      retrieve the attribute value with the data type of DateTime
02-Feb-98     CSWT    Added C library function free() to release previously allocated
                      memory for variable date_time_Ptr, a ODLDate struct pointer
                      declared to hold date and time values (This change is for NCR
                      ECSed10255 about a user (ASTER) is getting a core dump in
                      _get_pcattrib)
02-Feb-98     CSWT    Added C Standard I/O function "fclose" to close the file associated
                      with fp which is a file pointer previously obtaioned using C Standard
                      I/O function "fopen" (This change is for NCRed11788 about Toolkit
                      5.2.1 PGS_MET_GetPCAttr.c fopen without matching fclose)
12-Jun-98     CSWT    Modified code that call the function CopyAggregate() to copy a
                      source aggregate node with all of its parameters and all of the node's
                      progeny into a destination temporal node to only assign the address of
                      start of a source aggregate node into a destination temporal node
                      and also deleted code that call the function RemoveAggregate() to remove an
                      aggregate node and all its progeny as long as the function CopyAggregate()
                      being called (This change is for NCR ECSed15508 about it spends too much
                      time to retrieve the data for badpixelinformation)

END_FILE_PROLOG
*******************************************************************************/
```

7.2 Closed NCRs

This section provides a summary of the NCRs which have been fixed and released as a patch. The following Toolkit NCR has been fixed and is available to the Science Community. This fix occurs in Version 2 Drop 4P Landsat.

The following NCR is closed with this patch:

NCR ID:	**ECSed15508**
Title:	It spends too much time to retrieve the data for badpixelinformation
Severity:	2
Problem:	Data is being read and processed repetitively although it is already resident in memory and does not need to be read again. This causes later reads to take too long.
Resolution:	Modified functions PGS_MET_GetPCAttr() and PGS_MET_GetPCAttrF() that call the function CopyAggregate() to copy a source aggregate node with all of its parameters and all of the node's progeny into a destination temporal node to only assign the address of start of a source aggregate node into a destination temporal node and also deleted code that call the function RemoveAggregate() to remove an aggregate node and all its progeny as long as the function CopyAggregate() being called.

7.3 Open NCRs

None.

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